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Mitigating Suicide Risk Post-Discharge from Inpatient Crisis Stabilization: Safety Planning Intervention

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Abstract

Purpose: The purpose of this program evaluation is to evaluate the effectiveness of a newly implemented safety planning intervention (SPI) tool, comparing patient outcomes relating to suicide attempt rates, emergency department (ED) encounter rates, and inpatient rehospitalizations rates pre and post its integration to care in a suburban behavioral health hospital.

Methods: A descriptive cohort design utilizing a retrospective chart review was completed over six months, three months pre, and three months post implementation of the SPI program. A convenience sample of inpatient charts was reviewed to assess the rate of suicide attempts, ED encounters frequencies, and hospitalization rates before and after the SPI program's deployment. The context, input, process, and product (CIPP) model of evaluation was utilized.

Results: A sample of 100 charts met study criteria. Sixty-four percent completed the SPI tool, 36% did not. There was a statistical reduction in the mean of emergency room encounters, inpatient admissions, suicide attempts, and post SPI implementation compared to pre ($p < .001$). Suicidal ideation, when compared to post to pre SPI reduced as well ($p = .013$). Depressive disorder subjects (86%, $n = 55$) were most likely to complete the SPI while Malingerers were least likely to do so (0%, $n = 0$).

Implications for Practice: This program evaluation appears to reveal the SPI tool's positive impact on patient outcomes. With the most substantial change visualized in actual suicide attempts, the integration of the SPI in a suburban behavioral health inpatient setting may be a life-preserving tool.

Keywords: Safety Planning Intervention, Suicide Risk, Acute Psychiatric Hospitalization

Mitigating Suicide Risk Post-Discharge from Inpatient Crisis Stabilization: Safety Planning Intervention

In the United States, one is twice as likely to die via intentional self-inflicted harm than by a homicide (National Center for Health Statistics [NCHS], (2017). Suicide, as described by the World Health Organization (WHO), is a global phenomenon, occurring throughout the lifespan, ending 800,000 lives in 2017 (WHO, 2019). In 2017, suicide was the tenth leading cause of death in the United States (U.S.) claiming the lives of more than 47,000 Americans, reflecting an increase of 6.8% from the previous year (NCHS, 2017). Suicide is second leading cause of death among those aged 10 to 34 years old and the fourth cause of death for those aged 35 to 54 years old (NCHS, 2017).

Hospitalizations have long been an integral element of mental health treatment and are often still utilized present-day for conditions such as severe suicidal ideations (SI) with a developed suicide plan. Inpatient psychiatric hospitalization ensures immediate safety for the suicidal person and their contacts while providing provision for immediate and intensive treatment strategies. The structured environment allows for continual psychiatric assessments, safe medication initiation and titrations under close nursing observation, and intensive group and individual therapy sessions.

A poorly understood phenomenon associated with inpatient hospitalizations is the increased risk of suicide immediately following discharge. A meta-analysis of over 20 studies regarding suicide trends of patients discharged from psychiatric units found a heightened risk of suicide within one week after discharge and one month after discharge (Chung et al., 2019). Suicide rates among those recently discharged from psychiatric units are up to 100 times higher than the general population. Recent discharge poses a

higher risk factor for suicide death than other known suicide risk factors (Chung et al., 2019).

The purpose of this quality improvement project was to evaluate the implementation of a Safety Planning Intervention (SPI) protocol, comparing patient outcomes relating to suicide and inpatient rehospitalizations pre and post the implementation. The aim of this project was to decrease suicidal ideation and actions as well as readmission rates after participation in SPI. The SPI initiative began October 3, 2019, after a multidisciplinary team of mental health professional key stakeholders gathered to discuss how best to implement the SPI into the inpatient visit. SPI's addition to existing discharge planning within an inpatient behavioral health unit is in alignment with addressing and meeting National Patient Safety Goal (NPSG) 15.01.01, Elements of Performance (EP) number six, for Joint Commissioned-Hospitals that treat patients with behavioral health conditions.

The project addressed the following question: In adult patients aged 18-59 years, admitted to a behavioral health acute stabilization unit, what impact did implementation of a standardized SPI program have on those admitted? Additionally, what was the most common diagnosis of those who completed SPI? The outcome measures for this study included: Rate of SPI utilization for inpatients; rate of return to hospital (emergency department visit and inpatient admit) with complaints of SI pre and post SPI implementation; severity of the Columbia Suicide-Severity Rating Scale (C-SSRS); rate of documented suicide attempts pre and post SPI completion; diagnoses of those who completed the SPI versus incomplete; demographic data that include: military status, gender, age, race, and housing status.

Review of the Literature

The literature review for this study included a search of CINAHL, Cochrane Library, EBSCO, Google Scholar, NCBI, PsycInfo, and PubMed databases. The search terms and keywords utilized included *evidence-based safety planning intervention, discharge planning, readmission rates for psychiatric hospitals, case management, suicide post-discharge from acute care psychiatric settings, high risk for suicide, risk assessment,* and *follow-up care for discharge from psychiatric hospitals.* Publications were searched from 2000 to 2019; however, selected articles ranged from 2005 to 2019. The language was restricted to English and maintained the following inclusion criteria: participants aged 18 years old or older, having addressed suicidality OR safe discharge planning AND psychiatric settings. Exclusion criteria included study articles that utilized participants under the age of 18 years, published studies older than 2009, and discharge planning interventions that did not address behavioral health concerns. Twenty-one publications were reviewed, eleven were selected for inclusion.

Suicide Risk Post-Discharge

It is widely accepted that individuals post-discharge from an acute psychiatric hospitalization have a uniquely high risk for suicide (Chung et al., 2019; Chung et al., 2017; Haglund, Lysell, Larsson, Lichtenstein, & Runeson, 2019; Hjorthøj, Madsen, Agerbo & Nordentoft, 2014; Knox et al., 2012; Olfson et al., 2016). This phenomenon may be multifactorial, having to do with a lack of resources for independent, patient-initiated crisis prevention and management, lack of follow-up availability, access to prescriptions, social support systems, and access to lethal means. Deficient discharge planning and intervention that addresses the contributing factors may be modifiable

barriers to wellness and safety post-discharge. Implementation of SPI during inpatient stays may address these possible contributing factors. A systematic review and meta-analysis of rates of suicide after discharge from psychiatric services conducted by Chung et al. (2017) found the pooled estimate post-discharge rate per 100,000 person-years was 484 for risk of suicide within the first three months of discharge. The rate of suicide post-discharge has increased over time, reflecting higher rates within 1995-2004, compared to samples from earlier studies (Chung et al., 2017). A meta-analysis of suicide rates within the first week and the first month of discharge from psychiatric facilities established the pooled estimate within the first-month post-discharge was 2060 per 100,000 person-years; for the first week, 2950 per 100,000 person-years (Chung et al., 2019). A psychiatric admission within the preceding year has a high level of association with the risk of dying from a completed suicide (Hjorthøj et al., 2014).

Qin and Nordentoft (2005) found, of those who committed suicide, 37.0% of the men and 56.9% of the women had a history of psychiatric hospitalizations. Moreover, the crude risk associated with a history of psychiatric admissions was 14.1% and 22.7% for men and women, respectively, identifying women as being a higher risk for post-discharge suicide. Affective disorder diagnoses and substance misuse diagnoses are noted to be associated with a higher likelihood of suicide post-discharge (Qin & Nordentoft, 2005). A nationwide case-control study regarding suicide found 53% had received some variation of psychiatric care within that year (Hjorthøj et al., 2014). There is a missing link in discharge planning to account for the increased risk of suicidal acts status post-discharge for inpatient psychiatric hospitalization. Implementation of SPI during inpatient hospitalization may improve these outcomes.

Readmittance Concerns

Psychiatric inpatients are at increased risk of readmission shortly after discharge. High service utilization psychiatric patients were studied (N=235); during the follow-up period of the study, 79% were readmitted for inpatient psychiatric treatment (Bowersox, Saunders, & Berger, 2012). A systematic review of the literature illuminates inadequate or insufficient interventions of the psychiatric healthcare team, leading to frequent readmissions. These admissions are costly to the health care system and were categorized as substandard care (Beecham et al., 2004; Sfetcu et al., 2017). Sfetcu et al. (2017) proposed that along with identified factors of vulnerability, after-care planning, community care, social support presence, and contextual factors all play integral parts of declining high utilization of psychiatric inpatient services. Mgutshini (2010) conducted retrospective reviews along with clinician and patient interviews regarding risk factors for frequent psychiatric readmissions and echo similar sentiments of Sfetcu et al. (2017); however, they offer additional considerations such as non-concordance with prescribed medications and financial concerns.

Higher Risk Demographics and Populations

There are identifiable demographics and patient populations that are at an increased risk for post-discharge suicidal acts. Increased risk related to diagnosis, gender, and veteran status has been studied in various articles. Denmark researchers identified in 2005, the most common diagnosis associated with suicide within 30 days (N=1,319 deaths) of discharge was an affective disorder (Haglund et al., 2019). They also found that the risk of completed suicides post-discharge increased most dramatically in those diagnosed with schizophrenia; however, an increase was found in all psychiatric

diagnoses (Haglund et al., 2019). Olfson et al. (2016) conducted a nationwide retrospective longitudinal study of Medicaid participants. They found that both genders have a similar probability of suicide within the first ten days of discharge, yet men are twice as likely to engage in a fatal suicidal act than their female counterparts within 90 days. This difference is likely due to the severity of intention when engaging in suicidal acts; men, compared to women, more often select lethal means (Freeman et al., 2017).

The American veteran population is particularly vulnerable to mental illness and is a higher suicide risk population (Logan, Fowler, Patel, & Holland, 2016). The leading cause of inpatient hospitalizations within the Department of Defense are psychiatric (Ghahramanlou-Holloway et al., 2014). The Department of Defense and the creators of the SPI aligned forces to create the SPI and associated guidelines specifically for American veterans (Stanley & Brown, 2008).

Professional Nursing Recommendations

Professional nursing organizations are aware of the burden of untreated or undertreated mental illness in America. The nursing profession is invested in improved processes in interventions and outcomes of the inpatient psychiatric population. The American Psychiatric Nurses Association (APNA) Position Statement (2017) reported that severe mental illness costs Americans $193.2 billion in lost earnings annually: 33% of Medicaid recipients have mental illness or substance use disorder. An American living with a severe mental illness, on average, will die 25 years sooner than other U.S. citizens (APNA, 2017). The APNA recommends that health care systems should be positioned to address mental health and substance use at the patient's initial contact and going forward. Screenings should be provided by the healthcare system that addresses necessary

prevention, early identification, brief identification, and treatment referrals throughout the patient's journey within a given healthcare system (APNA, 2017). The successful implementation of the SPI during inpatient crisis stabilization is congruent with these recommendations.

Regulatory Recommendations

Regulatory agencies are invested in the transformation and enhancement of discharge planning for psychiatric inpatients. The Joint Commission (TJC) is a regulatory agency that is responsible for accrediting hospitals and behavioral health centers. Standards of care that must be met to obtain or maintain accreditation include but are not limited to TJCs National Patient Safety Goals (NPSGs) (Requirement, Rationale, Reference [R^3 Report], 2019). Effective July 1, 2019, TJC set forth seven new Elements of Performance to address the NPSGs for suicide prevention 15.01.01 (R^3 Report, 2019). These elements for improvement apply to all hospitals and behavioral health care organizations that are TJC-accredited (R^3 Report, 2019, p.1). NPSG 15.01.01, EP6, requires all psychiatric patients to be evaluated or treated for behavioral health conditions listed as their primary reason for receiving care and for patients who express SI throughout their care course (R^3 Report, 2019, p.1). The requirement for EP6 states, facilities should follow written policies and procedures concerning counseling services and follow-up care for individuals that present a risk for suicide at the time of discharge (R^3 Report, 2019). Adhering to these standards with the implementation of the SPI will not only ensure the maintenance of TJC accreditation for behavior health hospitals but hopefully will enhance the quality of care provided.

SPI Validation

The SPI is evidenced-based, and use has been identified by the Suicide Prevention Resource Center (SPRC) to be best practice (Stanley et al., 2018; SPRC, 2012). The SPI is superior to traditional no-suicide contracts, in that use of no-suicide contracts are not evidence-based practice, nor are they a viable defense in legal proceedings for practitioners (Stanley & Brown, 2011; Stanley et al. 2018). The SPI is composed of a written list of prioritized coping techniques and support systems that a patient can utilize to alleviate intense suicidal ideations in a moment of crisis (Stanley & Brown, 2011). The SPI consists of six components including: (a) warning sign of impending crisis recognition; (b) use of social contacts for a distraction from SI; (c) the act of contacting friends or family to aid; (d) seeking out professional mental health; and (f) active reduction of access to lethal means (Stanley & Brown, 2011).

Stanley et al. (2018) compared the SPI intervention to usual care of suicidal patients in the emergency room in Veterans Heath Administration hospital emergency departments; researchers found that the intervention group was 45% less likely to engage in suicidal actions within six months of discharge ($p < .03$). The intervention group also attended outpatient mental health visits twice as often than those in the control group ($p < .001$) (Stanley et al., 2018). Boudreaux et al. (2012) attempted the first electronic, user-centered application of the SPI that is entirely self-guided. After the utilization of this brief SPI intervention, the severity of the patient's SI was significantly lower, and their ability to cope with their thoughts of suicide had increased.

Gaps in the literature include studies of SPI implementation outcomes in variations of patient populations such as adolescent and geriatric psychiatry, also

outcomes of implementation in outpatient settings such as providers' offices. Additionally, the literature does not speak to the effects SPI has on healthcare organizations, such as how it might lower high utilization rates and associated costs. However, Boudreaux et al. (2017) spoke to the burden of time the SPI may have on existing staff and attempted to mitigate this with a user-guided experience; a cost-dollar analysis may be more beneficial to support the addition of more paid time or supplemental staff. A significant gap in the literature is that the SPI tool has not been featured in a published study in an inpatient setting. Ghahramanlou-Holloway et al. (2014) are currently conducting a study evaluating the use of SPI in reducing the risk of suicide in acute care settings within the military.

Project Framework

The context, input, process, and product (CIPP) model of evaluation was utilized as the framework. The CIPP model is an approach focused on improvement that is comprehensive and systematic, evaluating the value of a program by its components (Hickey, & Brosnan, 2017). This framework is proven effective, where stakeholders' interests are central to the program evaluation (e.g., patients, staff, researchers) (Farley & Battles, 2009). The CIPP framework determines program success in meeting targeted needs, which helps guide decision-makers when choosing to maintain, make improvements to, or discontinue a program altogether (Hickey, & Brosnan, 2017).

Methods

Project Design

This quality improvement project utilized a descriptive cohort design. A retrospective chart review was implemented on a behavioral health inpatient unit over a

six-month span that covered pre and post-implementation of the SPI program to evaluate its effect on patient outcomes.

Project Setting

This retrospective study took place in a Midwestern suburban hospital. The facility is a 507 bed, level two trauma, non-profit teaching hospital (American Hospital Directory [AHD], 2019). The facility offers inpatient services including, surgical, intensive care, and acute psychiatric crisis stabilization. The facility reported 25, 205 discharges the preceding year; the average length of stay for inpatient psychiatry was 6.48 days. The Medicare case-mix (CMI) for psychiatry was 1.13, compared to the overall average of 1.73 for all inpatient services (AHD, 2019). The United States Census Bureau (USCB) (2019), estimates the population at 996,945 of which 59,954 are Veterans, and ten percent are impoverished. About 68% identified as white alone raced, and 24.9% identify as black alone raced, 3.0% is Hispanic or Latino (USCB, 2019).

Project Sample

A convenience sample was utilized for this project. The inclusion criteria was English-speaking patients, within the ages of 18-59 (age limitation of the facility), and had a C-SSRS completed. Those excluded were non-English-speaking patients, those less than 18 years and greater than 59 years old, patients without a C-SSRS completed, transfers for acute medical concerns, and those who discharged against medical advice.

Project Approval Processes

Approval to conduct this study was granted by the doctorate committee of graduate studies at the University of Missouri – St. Louis (UMSL). Subsequent approvals

were granted from the Institutional Review Board (IRB) and Research Business Review (RBR) committees of the hospital organization as well as UMSL IRB.

Project Data Collection

No direct contact with the patient population occurred; this project was limited to a retrospective chart review. Data was retrieved from charts within the electronic health record including: encounter inquiries data, initial central intake evaluations; C-SSRS scores; SPI completion documentation; psychiatric history, and physicals; nursing, social work, and attending discharge summaries. Relevant data was collected and transferred to the data collection tool. All data was aggregated with the Statistical Package for the Social Sciences (SPSS) software and evaluated using descriptive and inferential statistics via the Intellectus Statistics software.

Data Analysis

The Intellectus Statistics software was utilized to present the descriptive and inferential statistical results cultivated from the project. Descriptive statistics were presented for the rate of use for SPI, fallouts of SPI utilization, demographic data, and diagnosis distribution. Inferential statistics were presented to evaluate the rate of return visits to the emergency department pre and post SPI implementation, the rate of psychiatric hospital readmissions pre and post SPI implementation, and the rate of suicide attempts pre and post SPI implementation with two-tailed Wilcoxon signed rank tests.

The two-tailed Wilcoxon signed rank test was utilized in these cases as the alternative to the *t*-test, as the normal distribution and homogeneity assumptions are not shared. As the non-parametric option, the two-tailed Wilcoxon signed rank test is more conservative than its parametric counterpart. The Fisher exact test was utilized to

evaluate the C-SSRS scores. Low and medium risk categories were small in the post sample. To allow for statistical analysis of this categorical data, the low and medium categories were combined in both the pre and post samples. A Fishers exact test was utilized in place of a Chi-Square test, as the low/medium category was still minimal; an instance were the Fisher exact tests is more powerful.

Results

A total of 115 patients admitted between October 2, 2019, and January 3, 2020, were reviewed for inclusion in this study. One participant was excluded due to being transferred emergently due to acute medical concerns, five were excluded for discharging against medical advice, nine charts were excluded as they were duplicated subjects, who had been readmitted within the studied three month period.

Among the remaining 100 participants, the majority were male at 63%. The most represented race was white/Caucasian at 79%. The mean age was 36 years. The most frequently observed housing status at discharge was home with family or significant other at 81%. Three percent of the participants were veterans (See Appendix A).

Of the total 100 charts reviewed, 64% of patients completed the SPI, while 36% did not. Of the thirty-six participants that did not complete the SPI, 69.4% (n = 25) did not have a documented reason, 25% (n = 9) actively refused, and 5% (n = 2) were deemed by staff to not be cognitively able (See Appendix B).

No participant (n = 0) who carried the diagnosis of Malingerer completed the SPI. 86% (n = 55) of those carrying the diagnosis of suicidal ideation completed the SPI, 70% (n = 45) of those with depressive disorders followed (See Appendix C). Regarding

substance use, opioid users were least likely to completed the SPI at a rate of 5% (n = 3). Whereas, 56% (n = 36) of nicotine users completed the SPI (See Appendix C).

The rate of ED encounters pre SPI intervention was 100% (n = 100) with 64% (n = 64) having completed the SPI during their initial SPI intervention admission. Whereas the rate of ED encounters post SPI intervention was 29% (n = 29), with 21% (n = 21) having completed the SPI. There was a statistically significant decline from the mean ED encounters pre (M = 1.78) to the mean ED encounters post SPI (M = 0.67) in those who completed the SPI tool. The results of this statistical analysis was significant to a p value of $< .001$, with alpha valued at 0.05 (See Appendix D).

The rate of inpatient admissions pre SPI intervention was 100% (n = 100) with 64% (n = 64) having completed the SPI during their initial SPI intervention admission. Whereas, the rate of inpatient admissions post SPI intervention was 20% (n = 20), with 14% (n = 14) having completed the SPI. There was a statistically significant decline from the mean inpatient admission rates before the implementation of the SPI tool (M = 1.33) compared to the mean inpatient admission rates post SPI (M = 0.39). The results of this statistical analysis was significant to a p value of $< .001$, with alpha valued at 0.05 (See Appendix E).

The rate of documented suicide attempts for the entire sample pre SPI intervention was 43% (n = 43), with 29% (n = 29) having completed the SPI during their initial SPI intervention admission. Whereas the rate of suicide attempts post SPI intervention was 3% (n = 3), with 1% (n = 1) having completed the SPI. There was a statistically significant decline from the mean of suicide attempts prior to the implementation of the SPI tool (M = 0.56) when compared to the mean suicide attempts

post SPI (M = 0.02). The results of this statistical analysis was significant to a p value of < .001, based on an alpha value of 0.05 (See Appendix F).

In determining if the scores of the C-SSRS pre and post SPI implementation were independent of one another, a Fishers exact test was conducted. There was a decline in the severity found in those who returned, and many did not return at all. The outcome of the Fisher exact test resulted significantly, p = .013, with alpha valued at 0.05. (See Appendix G).

Discussion

The purpose of this quality improvement project was to evaluate the SPI protocol to determine if it decreased suicide and inpatient rehospitalizations. Findings of this evaluation determined that those who completed the SPI tool (64%) had a decline in suicide attempts, ED encounters, and frequency of inpatient admissions three months post implementation. Suicidal ideation severity also declined with the use of the SPI tool, as measured by the validated C-SSRS. Malingerers were least likely to engage in this tool, which is consistent with the diagnosis goal of secondary gain and false presentation of symptoms in order to obtain personal gains (i.e. shelter, nutrition, controlled substances, evasion of legal ramifications) from the healthcare setting. Depressive disorders were the most represented within the SPI users, which is consistent with existing literature correlating affective disorders with increased suicidality (Qin & Nordendoft, 2005).

Almost none of the SPI participants who completed the tool but returned to the healthcare system post discharge had a documented suicide attempt. In contrast, those who failed to complete the SPI tool and also returned to the healthcare system, attempted suicide least twice as often of those that completed the SPI tool. The utilization of the SPI

in this program evaluation appears to reduce suicide attempts after discharge. The integration of SPI appears to be suicide protective, thus life preserving.

Emergency Department encounters dropped more than an average of one encounter post SPI implementation for those who completed the tool when compared to pre SPI. When patients effectively use the SPI, they are able to better manage suicidal ideations in the outpatient setting. This demonstrates the effectiveness of the SPI tool. For those who returned for behavioral health concerns, the severity in suicidal ideations lessened categorically post SPI, when compared to pre. This is clinically important because it shows that the use of the SPI guides the patient in engaging in de-escalation techniques, as the SPI is designed to do.

Patients admitted to the hospital for behavioral health concerns three months post the SPI implementation of declined more than one admission on average when compared pre. The decline of inpatient admissions correlated with the decline of suicidal ideation. When patients are presenting to the healthcare system, they are less critical, and therefore can be safely managed with outpatient services.

Most of the sample demographics did not appear to be a major factor in the outcomes. Age was normally distributed with a mean of 34 years. Gender was predominately male, and Caucasian was the most predominate race. Stable housing with familial support likely supported the positive outcomes, as Sfetcu et al. (2017) described.

Recommendations for Further Study

Recommendations for future study include increasing the sample size by including additional adult units, and emergency room involvement. Also, increasing the data collection time frame, and patient follow-up after discharge should be attempted to

track these patients in the community. The results of this study are promising, replicated results in additional studies within the inpatient behavioral health settings are necessary.

Implications for Practice

The results of this study strongly suggest not only the continued use of the SPI tool, but to enhance the level of attention and time devoted to this intervention as a validated and effective instrument that is protective against suicidal acts, and reduces return to the emergency room, as well as frequent readmissions to behavioral health. The SPI empowers the patient to mitigate their own suicidal ideations by giving them an action plan to follow for self-de-escalation. With the most substantial change visualized in actual suicide attempts, the integration of the SPI may be a life-preserving intervention. As it relates to congressional priorities, NPSG 15.01.01, EP6 has been met with the implementation of the SPI tool within this TJC facility.

Conclusion

This study is of importance as suicide in America continues to rise and is remains a significant public health concern. There is much room for advancement and improvement. The outcomes of this program evaluation of the SPI intervention are positive. Suicide attempts, ED encounters, inpatient admissions, and suicide ideation severity all declined after the interjection of the SPI tool, in a statistically significant manner. Mitigation of suicidality within this high-risk population is likely to impact the rising suicide rates in America in a positive way. Suicide attempts, ED encounters, inpatient admissions, and suicide ideation severity all declined after the interjection of the SPI tool, in a statistically significant manner. Mitigation of suicidality within this high-risk population is likely to impact the rising suicide rates in America in a positive way.

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Appendix A

Table 1

Frequency Table for Descriptive Statistics of Sample

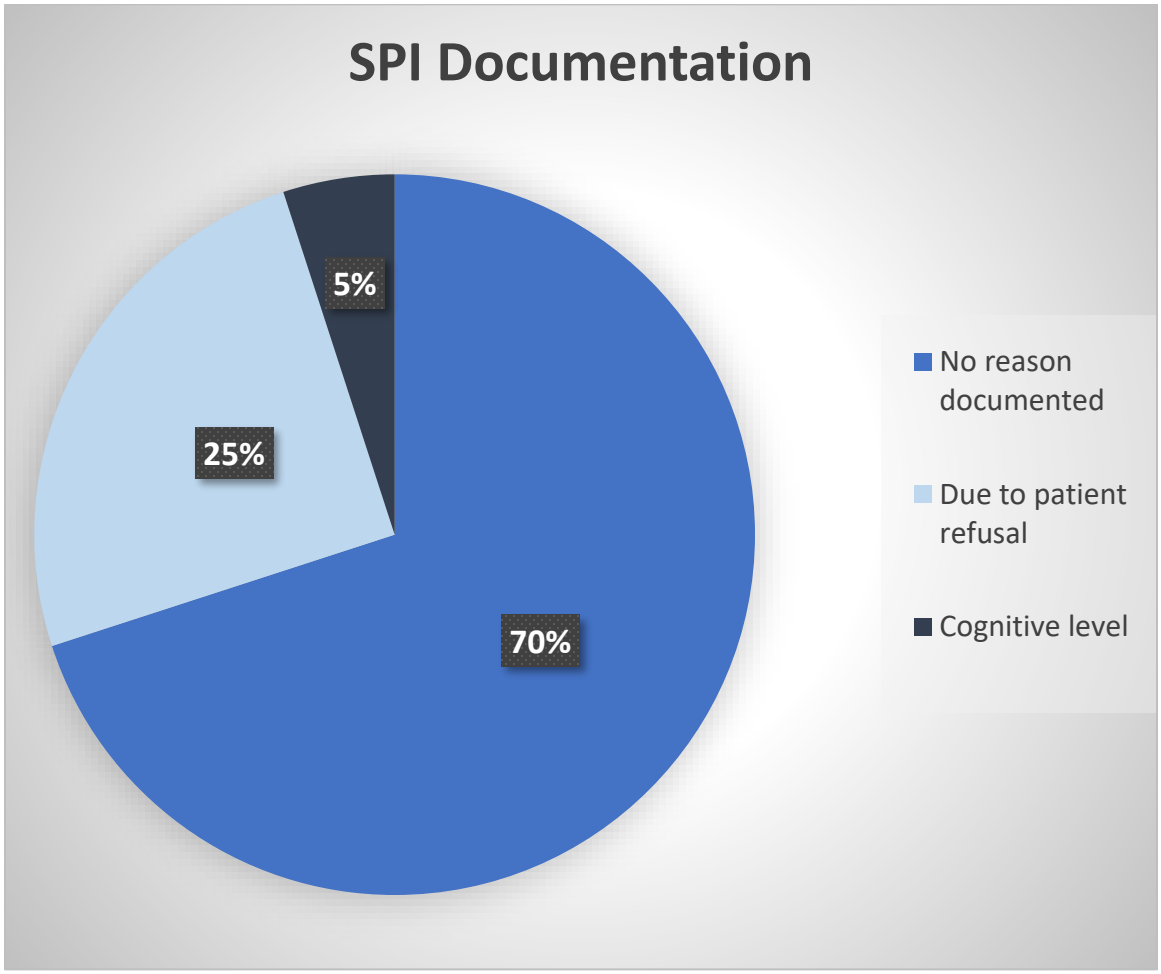
Descriptive Variables	*n*
Mean Age	34.61 (SD = 12.74)
Gender	
Male	63
Female	36
Transgender F-M	1
Race	
White/Caucasian	79
Black/African American	19
Asian	2
Housing Status at Discharge	
Home with Family/Spouse	81
Homeless	8
Rehabilitation Facility	7
Skilled Nursing Facility	4
Veteran	
No	97
Yes	3

Note. Due to rounding errors, percentages may not equal 100%; *N=100*

Appendix B

Figure 1

Rationale for not Participating in SPI Program



Note: rounded to the nearest percent, *n*=36

Appendix C

Table 2

Frequency Table for Diagnosis' of Sample
Split by SPI completion

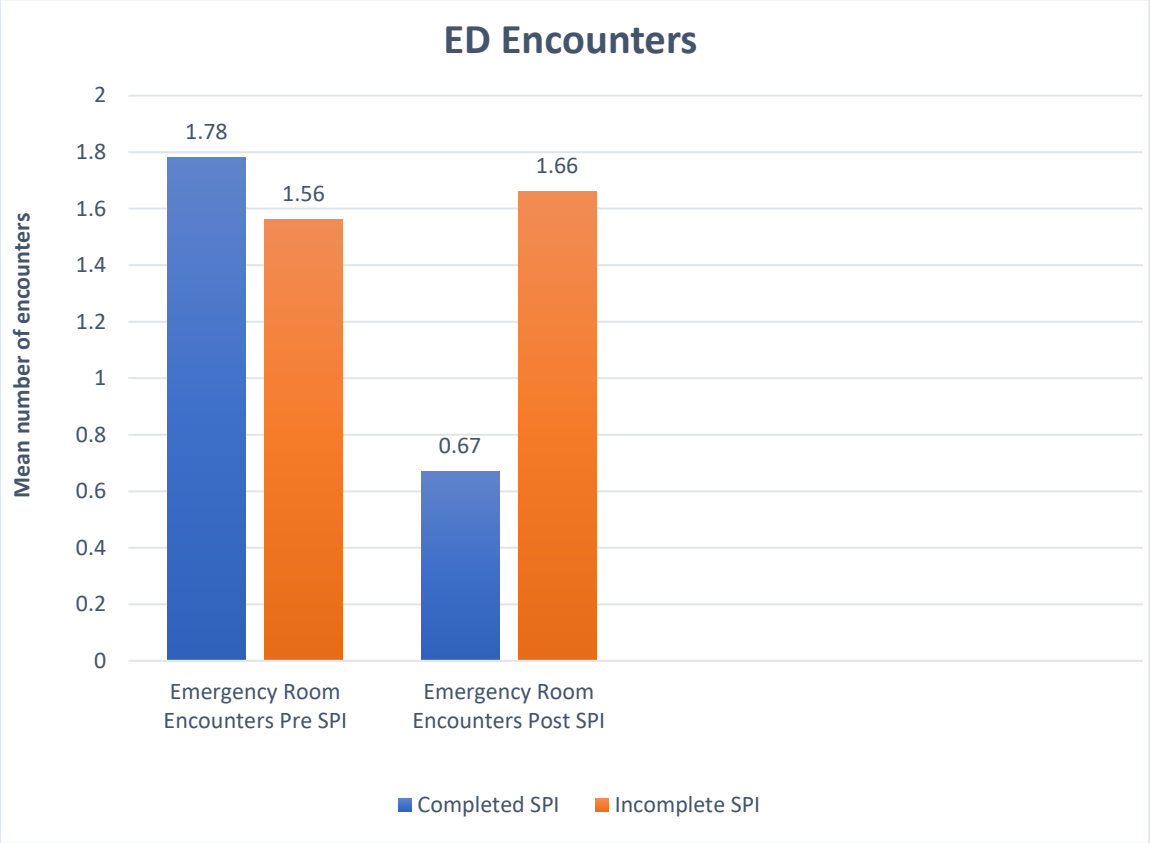
Diagnosis	Completed SPI	Did not complete SPI
Depressive Disorders, Unspecified		
No	19 (30%)	15 (42%)
Yes	45 (70%)	21 (58%)
Psychotic Disorders, Unspecified		
No	55 (86%)	26 (72%)
Yes	9 (14%)	10 (28%)
Malingerer Diagnosis		
No	64 (100%)	35 (97%)
Yes	0 (0%)	1 (3%)
Post-Traumatic Stress Disorder		
No	52 (81%)	31 (86%)
Yes	12 (19%)	5 (14%)
Anxiety Disorders, Unspecified		
No	39 (61%)	22 (61%)
Yes	25 (39%)	14 (39%)
Non Compliance by Diagnosis		
No	46 (72%)	26 (72%)
Yes	18 (28%)	10 (28%)
Suicidal Ideation by Diagnosis		
No	9 (14%)	12 (33%)
Yes	55 (86%)	24 (67%)
Alcohol Use, Unspecified		
No	39 (61%)	24 (67%)
Yes	25 (39%)	12 (33%)
Opioid Use, Unspecified		
No	61 (95%)	32 (89%)
Yes	3 (5%)	4 (11%)
Stimulant Use, Unspecified		
No	52 (81%)	30 (83%)
Yes	12 (19%)	6 (17%)

Note. Due to rounding errors, column wise percentages may not equal 100%.

Appendix D

Figure 2

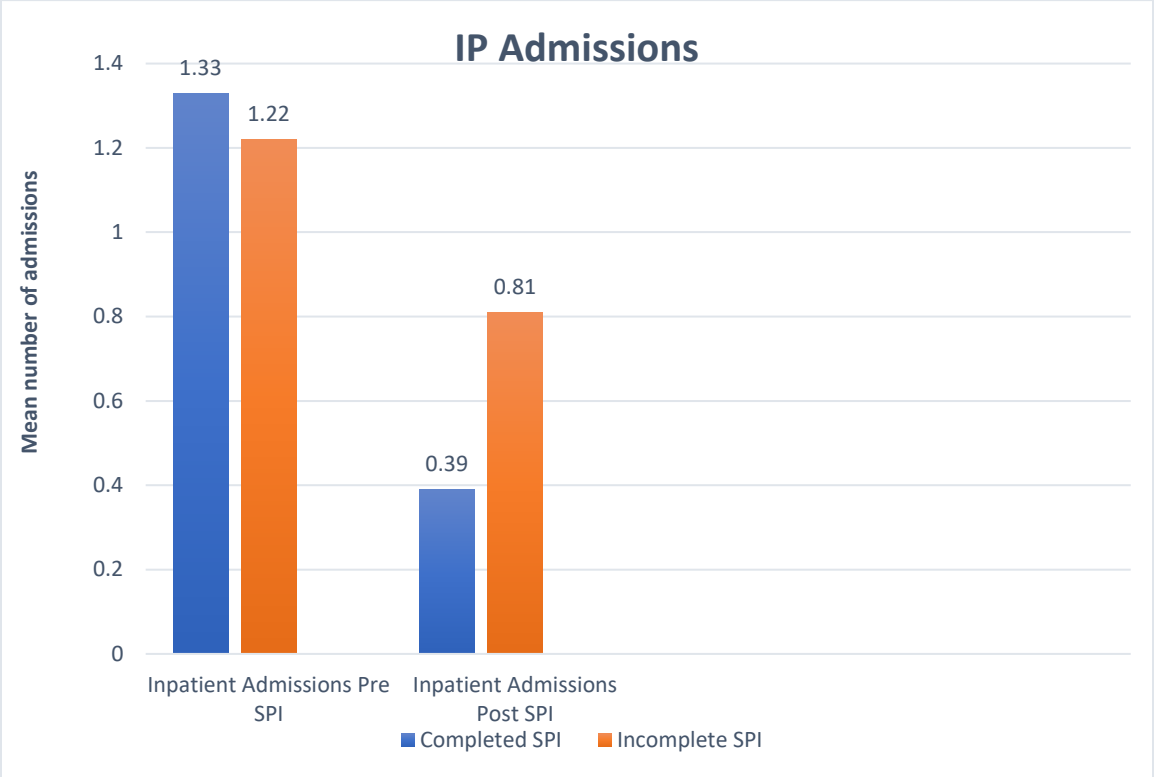
Mean values for Emergency Department Encounters pre and post SPI admission Split by SPI complete vs incomplete



Appendix E

Figure 3

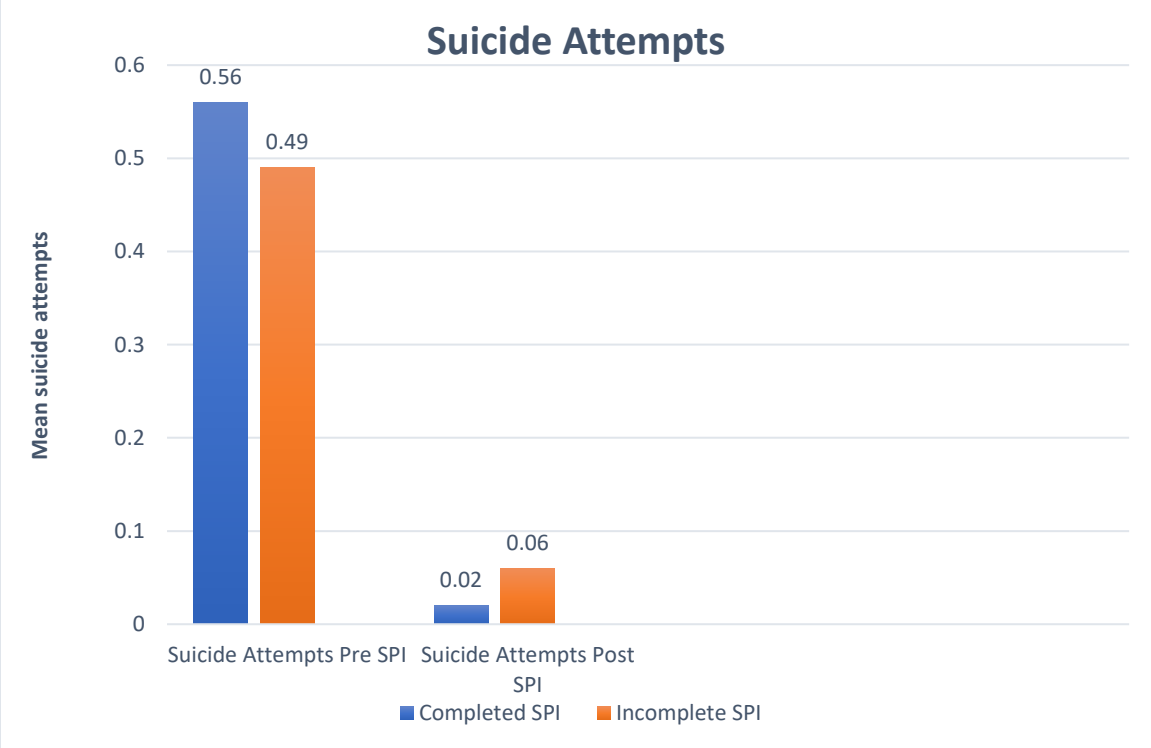
Mean values for Inpatient Admissions pre and post SPI admission
Split by SPI complete vs incomplete



Appendix F

Figure 4

Mean values for Suicide Attempts pre and post SPI admission
Split by SPI complete vs incomplete



Appendix G

Table 3

Observed and Expected Frequencies for CSSR-S pre and post SPI admission Split by SPI complete vs incomplete

	C-SSRS Pre SPI Admission			
C-SSRS Pre SPI Admission	No Risk Detected	Low/Medium	High Risk	*p*
Did Not Return/No Risk	7[6.33]	9[12.66]	29[26.02]	.013
No Risk Detected	2[0.84]	4[1.69]	0[3.47]	
Low/Medium Risk	0[0.70]	3[1.41]	2[2.89]	
High Risk	0[1.12]	2[2.25]	6[4.62]	

Note. Values formatted as Observed[Expected.